N36-136495 M/TH   09/940,716   02410250aa
Amendment dated 04/15/2004   Reply to office action mailed 12/17/2003

The following is a complete listing of all claims in the application, with an indication of the status of each:

Listing of claims:

1   1. (currently amended) A polarizing filter having a laminate structure,
2   comprising:
3   a first group of dielectric thin film materials;
4   a second group of dielectric thin film materials; and
5   a third layer of dielectric thin film material,
6   wherein a plurality of dielectric materials different from one another in
7   refractive index with respect to a wavelength of incident light are classified
8   into a̶ said first group and a̶ said second group so that a maximum value
9   among the refractive indices of the dielectric materials belonging to said first
10   group is lower than a minimum value among the refractive indices of the
11   dielectric materials belonging to said second group;
12   wherein at least one layer of dielectric thin film selected from the
13   dielectric materials belonging to said first group and at least one layer of
14   dielectric thin film selected from the dielectric materials belonging to said
15   second group are alternately laminated o̶n̶ a̶ t̶r̶a̶n̶s̶p̶a̶r̶e̶n̶t̶ f̶l̶a̶t̶ s̶u̶b̶s̶t̶r̶a̶t̶e̶ to form
16   said laminate structure, said laminate structure being mounted on a transparent
17   flat substrate; and
18   wherein o̶n̶e̶ said third layer of t̶h̶e̶ dielectric thin film h̶a̶v̶i̶n̶g̶ has a
19   refractive index which is higher than the maximum value selected from said
20   refractive indices of the dielectric materials belonging to said first group and
21   which is lower than the minimum value selected from said refractive indices
22   of the dielectric materials belonging to said second group and is laminated on

23   an outermost surface of said laminate structure, said laminate structure being

24   between said third layer and said transparent flat substrate.

1   2. (canceled)

1   3. (previously presented) A polarizing filter according to Claim 1, wherein

2   one to four layers of dielectric thin films selected from said first group and one

3   to four layers of dielectric thin films selected from said second group are

4   laminated alternately on said transparent flat substrate.

1   4. (previously presented) A polarizing filter according to Claim 1, wherein a

2   refractive index difference with respect to the wavelength of incident light

3   between adjacent dielectric thin films selected from the dielectric materials

4   belonging to said first and second groups respectively is in a range of from

5   0.15 to 1.2, both inclusively.

1   5. (previously presented) A polarizing filter according to Claim 1, wherein

2   optical film thickness of each of said dielectric thin films is in a range of 0.25λ

3     $\pm 0.15\lambda$ in which λ is a wavelength of incident light.

1   6. (previously presented) An optical device using a polarizing filter defined

2   in Claim 1, wherein an angle of incidence on said polarizing filter is in a range

3   of from 20 to 70 degrees.

1   7. (currently amended) ~~The~~ A polarizing filter ~~of claim 1 further~~ comprising:

2   a flat transparent substrate; and

3   at least three layers laminated one on another on said substrate, said at

4   least three layers including an outermost layer having a first refractive index,

5   and odd and even ~~number~~ numbered layers, beginning with a first layer

6   adjacent to said substrate, interposed between said outermost layer and said

7   substrate, wherein:

8   a refractive index of each said odd ~~number~~ numbered layer is higher

9   than the first refractive index; and

10   a refractive index of each said even ~~number~~ numbered layer is lower

11   than the first refractive index.

1   8. (currently amended) ~~The~~ A polarizing filter ~~of claim 1 further~~ comprising:

2   a flat transparent substrate; and

3   at least three layers laminated one on another on said substrate, said at

4   least three layers including an outermost layer having a first refractive index,

5   and odd and even ~~number~~ numbered layers, beginning with a first layer

6   adjacent to said substrate, interposed between said outermost layer and said

7   substrate, wherein:

8   a refractive index of each said odd ~~number~~ numbered layer is lower

9   than the first refractive index; and

10   a refractive index of each said even ~~number~~ numbered layer is higher

11   than the first refractive index.

1   9. (previously presented) A polarizing filter according to claim 7, wherein

2   total number of at least three layers is not larger than seven.

1   10. (previously presented) A polarizing filter according to claim 7, wherein

2   the first refractive index is 1.62 or 1.46.

1   11. (original) A polarizing filter according to claim 7, wherein said at least

2   three layers are constructed by three layers, the refractive index of the first

3   layer is 2.13, the refractive index of the second layer is 1.46, and the first

4   refractive index of the outermost layer is 1.62.

1   12. (original) A polarizing filter according to claim 7, wherein said at least

2   three layers are constructed by three layers, the refractive index of the first

3   layer is 2.13, the refractive index of the second layer is 1.40, and the first

4   refractive index of the outermost layer is 1.46.

1   13. (original) A polarizing filter according to claim 7, wherein said at least

2   three layers are constructed by seven layers, the refractive indexes of the first

3   to sixth layers are 2.13, 1.46, 2.13, 1.46, 2.13 and 1.46, respectively, and the

4   first refractive index of the outermost layer is 1.62.

1   14. (original) A polarizing filter according to claim 7, wherein said at least

2   three layers are constructed by five layers, the refractive indexes of the first to

3   fourth layers are 2.13, 1.46, 2.13 and 1.46, respectively, and the first refractive

4   index of the outermost layer is 1.62.

5   15. (original) A polarizing filter according to claim 8, wherein said at least

6   three layers are constructed by seven layers, the refractive indexes of the fist to

7   sixth layers are 1.40, 1.62, 1.40, 1.62, 1.40 and 1.62, respectively, and the first

8   refractive index of the outermost layer is 1.46.

1   16. (original) A polarizing filter according to claim 8, wherein said at least

2   three layers are constructed by five layers, the refractive indexes of the first to

3   fourth layers are 2.13, 1.40, 1.95 and 1.46, respectively, and the first refractive

4   index of the outermost layer is 1.62.

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1   17-22. (withdrawn)